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ABSTRACT

This report is one of five submitted as products of a "Study Designed to Assist Planning of Research on Significant Instructional Features in Bilingual Education Programs." The reports are intended to assist the National Institute of Education (NIE) in its plans for a major new research study in bilingual education. The present report presents two alternative study designs and plans for implementation of the instructional features study. It is based on the knowledge base assembled in the three preceding reports. Each of the two designs is described in terms of a series of studies covering such subjects as the classroom, student case histories, contextual features, management, consumer attitudes, and language acquisition and use. Sample design is also discussed at length. The designs are presented for the information of NIE, and are not intended for direct use in a Request for Proposal. (Author/JB)

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BILINGUAL INSTRUCTIONAL FEATURES PLANNING STUDY

Planning Paper 4

Tentative Alternative Designs for a Study of Significant Instructional Features in Bilingual Education

by

Robert L. Goodrich

February 8, 1980

Contract No. NIE-400-79-0071
Study Designed To Assist Planning of Research on Significant Instructional Features in Bilingual Education Programs: Task 4 Report

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FOREWORD

This report is one of five submitted by Abt Associates Incorporated (AAI) to the National Institute of Education, as products of a "Study Designed to Assist Planning of Research on Significant Instructional Features in Bilingual Education Programs", Contract No. NIE-400-79-0071. The reports are intended to assist NIE in its plans for a major new research study in bilingual education. The information provided will be combined with that from other sources by NIE in its construction of a research plan, to be incorporated in one or more requests for proposals (RFP's) to implement and conduct the major study.

The Instructional Features Study was formulated by the Division of Education Part C Coordinating Committee as one of several studies that implement research mandates in the language of ESEA Title VII, Part C. A description of the study (denoted "B-1") is provided in the U.S.H.E.W. Research Plan for Bilingual Education (July, 1979). This planning assistance study was one component of Phase I of the Three phase HEW plan.

These reports were prepared as products of Tasks 1-5 of the planning assistance contract. The titles of the reports, and summaries of their contents, are:

1. Working Definitions of Terms for the Bilingual Instructional Features Study, by Sarah Nieves-Squires and Robert L. Goodrich.

   This is a discussion of working definitions of terms for use in the features study. The terms discussed are "bilingual education", "consequences for children", "instructional features", "significant", and "model". Alternative definitions and the implications of each for design are presented. The definitions selected by NIE are intended to guide the research to be conducted.

2. A Bibliography of Significant Instructional Features in Bilingual Education Programs, by Sarah Nieves-Squires, et al.

   This is an annotated bibliography of papers, articles, pamphlets and books that deal with instructional features of bilingual education. The materials are organized by a classification system of features based on a content analysis of the sources surveyed. The report demonstrates that, while many instructional features are discussed, there is little or no empirically based research on their specific consequences for children.

3. Planning Factors for Studies of Bilingual Instructional Features, by Robert L. Goodrich.

   This report is based on a review of studies of educational instructional features in both monolingual and bilingual contexts, and on conversations with a large number of researchers and critics. The intent of the report is to summarize the state of the art of bilingual educational features research as a base for designs to be developed by NIE.

4. Tentative Alternative Designs for a Study of Significant Instructional Features in Bilingual Education, by Robert L. Goodrich.

   This report presents alternative study designs and plans for implementation of the instructional features study. It is based on the knowledge base assembled in the three preceding reports. The designs presented are not to be implemented directly by NIE in the RFP, but used. Rather, they are simply one source of information available to the NIE planners, to be factored into the overall design process.

5. Feasibility and Credibility of Bilingual Instructional Features Study Plans: Field Verification, by Sarah Nieves-Squires, Robert L. Goodrich, and Cristina Bodinger-de Uriarte.

   This report summarizes the results of 123 open interviews conducted with bilingual practitioners and administrators in five sites: Los Angeles, Miami, New York, Oakland, Rough Rock, AZ. The questions asked were designed to elicit responses about the working definitions of terms (Paper 1) and the designs considered (Papers 3, 4). The intent was to test the credibility and acceptability to consumers of alternative study approaches.

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1. Introduction

This report is the fourth of a series to be prepared by Abt Associates Inc. for the National Institute of Education (NIE) under a "Study Designed to Assist Planning of Research on Significant Instructional Features in Bilingual Education Programs", as authorized by Congress in the Bilingual Education Act, Part C. The overall goal of this planning assistance study is to produce alternative designs and recommendations for the Instructional Features Study. NIE will integrate these plans and recommendations into its own planning process and, when this process is complete, will issue RFP's for the implementation of the study or studies to be conducted.

This particular planning assistance report responds to Task 4, of the planning study to develop tentative alternative designs and study plans, including, but not limited to, details of all aspects of data collection, analysis, and interpretation." The alternative study designs presented here are built directly on the earlier papers produced as part of Tasks 1 - 3: (1) Working Definitions of Terms for the Bilingual Instructional Features Study, (2) A Bibliography of Significant Instructional Features in Bilingual Education Programs, and (3) Planning Factors for Studies of Bilingual Instructional Features.* This report builds directly on the previous planning papers, particularly 1 and 3. The reader who is not familiar with the H.E.W. Research Plan for Bilingual Education, Part C and the RFP that was issued for this planning research contract may be somewhat disoriented. This report is directed towards a specialized audience of persons who are or may be directly concerned with the research to be performed.

The research plans presented reflect our understanding of the state of the art in bilingual instructional research, and the needs of NIE and the Congress. A great number of people from the bilingual education community have been contacted (See Appendix) and asked their views on bilingual edu-

cation research. This process will continue. An early draft of this report was prepared for a conference of AAI personnel, Development Associates personnel, NIE personnel, and AAI consultants, to be held in Cambridge on January 31 - February 1, 1980. A list of attendees is provided in the appendix. The discussions held during the conference were very influential and important in preparing this final draft. The assistance of all the persons listed in the appendix is gratefully acknowledged.

The approaches to research outlined here will be discussed further with a large number of national figures in bilingual education, educational administrators, bilingual researchers, and practitioners in a field verification effort (Task 5) to be conducted in February. Sites for the field effort include New York City, Miami, Los Angeles, Oakland, and Rough Rock (AZ). The feasibility of obtaining cooperation for the features study, the credibility of the study and its measures, the availabilty of existing data, and the feasibility of obtaining new measurements will be surveyed, and the information used in performing Task 6. The Task 6 report, to be submitted July 1, 1980, will present more specific designs and field plans for the instructional features study. One important component of Task 6 will be to select actual tentative sites for the study.

This report is organized as follows. First, the basic approach of the instructional features study is discussed. Two options incorporating one or two waves of data collection, respectively, are discussed in the context of a study calendar. Second, a summary of the overall study, and its organization into modular components, is presented. Third, the sample design and site selection procedure are discussed. Finally, four sections present detailed plans for Wave 1, Wave 2, Report Production, and Follow-up studies, respectively.

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* Throughout this report, references will cite these earlier reports as Planning Papers 1 - 3, respectively.

2. Basic Approaches to the Study

The overall organization of the instructional features study was planned to acnieve three main objectives: (1) to identify "significant instructional features in a variety of types of bilingual education programs," (2) to "determine the consequences of these features for children participating in the programs," and (3) to "translate study findings into detailed, practical materials or guides for instructional improvement." Major results are to be available from Winter 1981 to Spring 1982, in time for the 1982 ESEA reappropriation hearings. The final report and guides for instructional improvement are to be ready by Spring 1983, two and one-half years after the study begins. This section presents alternative ways to accomplish study objectives within this time frame.

The alternatives presented are only two of the ones actually considered in the course of the planning study. Planning Paper 3 (Planning Factors for Studies of Bilingual Instructional Features) presents discussions of the advantages and disadvantages of several other approaches, and the intrinsic difficulties inherent in any form of bilingual educational research. Planning Paper 3 thus contains essential background for the present discussion. While there is not sufficient space here to repeat all essentials from the earlier discussion, the following paragraphs point out some of the research difficulties.

First, there is no general agreement as to what bilingual education is. There is no single, consistent theory of the bilingual instruction process. Rather there is a welter of different instructional approaches and conflicting instructional theories, whose effectiveness has little or no empirical verification. (As Planning Paper 2 demonstrates.) This confusion is one of the reasons that the bilingual education research base is relatively weak. The very general definition of bilingual education recommended in Planning Paper 1 recognizes diversity as a parameter of the features study.

Second, the clientele served by bilingual education projects is quite diverse. Title VII alone serves about 70 language groups; within these language groups there is a variety of cultures, subcultures and nationalities (e.g. Cuban, Mexican, Puerto Rican, and individuals from other Latin American countries where Spanish is spoken). Within each linguistic/cultural group, there is further variety in SES, community support, family support, linguistic proficiency, and patterns of language use. This means that it may well be inappropriate to transfer study results from one context to another. For instance, some of the best bilingual education research has been conducted in Canada, but many researchers do not regard this work as transferable to the U.S. context. Even within the U.S., knowledge is not necessarily transferable from one cultural/language group to another. This has seriously weakened the research base. The need to consider multiple languages and contexts makes this planning assistance study complex.

Third, there is a wide range in degree of implementation of bilingual education projects. This has made the interpretation of traditional treatment/comparison evaluation studies problematic.

Fourth, tests and measures needed for quantitative bilingual education research are not well developed. Product oriented quantitative studies have thus been substantially weakened.

Fifth, the context of bilingual education research and the interrelations among schools, families, and community are much more important than in other educational research. Community organizations, social clubs, churches, and parents figure prominently in the education of language minority students. Language is in large part acquired outside the schools, and beyond the control of the public education system. Bilingual education studies cannot afford to ignore learning that occurs out of school. Yet it would be difficult to include it in a strictly quantitative investigation.

If comparison groups are used in bilingual education research, they must be extremely well matched in order to account for the effects of social factors on the educational process. In fact, social factors may be the primary independent variables, and educational treatment only an intervening variable. The influences of home and community on students are so profound in the language domain that statistical "corrections" cannot possibly correct adequately for intergroup differences. Yet, valid comparison groups for implementation of the traditional quasi-experimental paradigm do not exist in sufficient numbers to support a large scale national study. These difficulties were demonstrated by Danoff et al. (1977-78) in the AIR evaluation, which can be regarded as a case study of the difficulties inherent in fitting bilingual education into the traditional quasi-experimental paradigm.

Planning Paper 3 demonstrates in some detail that the quantitative paradigm cannot be successfully applied to bilingual education research. Therefore traditional evaluation cannot be validly conducted. An important objective of the proposed study is to determine the consequences that particular instructional features have for students. This report shows how this objective can be attained without invocation of the traditional quantitative paradigm. Rather, the instructional features study should employ a combination of qualitative and quantitative, exploratory and verificational methods. Taking into account the study's objectives, its schedule for completion, resource constraints, and real-world feasibility, there appear to be two broad directions that the instructional features study can take.

The first option is to conduct a nearly exclusively qualitative, exploratory study, based on one year of data collection. An NIE planning document (Abstracts of Significant Instructional Features Planning Study) states that "since the case study approach, with extensive on-site observation, probably will be used, an estimated 12 months will be sufficient to select the sites and collect the data."

The second option combines quantitative and qualitative methodologies. Data collection is conducted in two academic years (1980-81 and 1981-82) instead of one. In the first wave (1980-81) quantitative classroom instructional dimensions methodology is combined with exploratory, qualitative approaches. Analysis will yield knowledge about instructional features and grounded hypotheses about consequences for students. In the second wave (1981-82) purely exploratory analyses are no longer performed. The analysis combines quantitative and qualitative methodologies to confirm and extend hypotheses based on the first wave results. Measures include tests to determine testable consequences for students, and highly systemized direct observation.

AAI recommends the second option to NIE because the confirmed, generalizable knowledge to be made availabled will be more useful in informing policy makers, and improving bilingual instruction. The knowledge produced under Option 2 will be a more definitive base for future research. The need for such a research base, founded in empirical knowledge, has been cited by many authors (e.g., Tucker, 1979) and was a major theme of Planning Paper 3.

Option 1 (One Wave of Data Collection)

The following basic study calendar implements Option 1. It is assumed (See Section 4, below) that at the beginning of the study, sites have been identified and have accepted participation.

Study Calendar (Option 1)

Wave 1 (Fall 1980 - Fall 1981) Roster schools, classrooms, and students; select sub samples within sites; collect case study, interview, formal and informal observational data; organize and reduce data for analysis.

Wave 2 (Fall 1981 - Fall 1982) Analyze Stage 1 data in two phases. The first six months concentrates on preparation of an interim report to assist NIE in the 1982 ESEA reappropriation hearings. The report identifies significant instructional features and presents preliminary hypotheses about the consequences they have for children. The second six months concentrates on further development of grounded hypotheses on consequences for students, and integration of all study findings for production of final reports.

Report Production (Fall 1982 - Spring 1983) Prepare final reports, including one for Congress, one for researchers, one for the general public, and "detailed, practical materials or guides for instructional improvement," for practitioners.

Follow-up (Fall 1980 and on) Select the follow on subsample, establish a student tracking system and collect baseline data as preparation for potential follow on studies.

2.2 Option 2 (Two Waves of Data Collection)

The two most important bases for research in bilingual education instructional features and their consequences are (1) the existing knowledge base about instructional features in monolingual education and (2) the existing knowledge base about bilingual instruction per se. The first knowledge base represents decades of research into instructional practices. This research has begun to yield useful results about the classroom features that seem significant, and that can be directly applied to the improvement of instruction. This research is exemplified in particular by the instructional time use approach of the Beginning Teacher Evaluation Study (Berliner et al., 1975-77) and by the Instructional Dimensions Study (Leinhardt, 1977b).* This body of research has produced results that need to be confirmed in bilingual education but do not require a great deal of further exploratory research. It is easy to extend the basic approach to include specific

*See Planning Paper 1, Section 4.1.

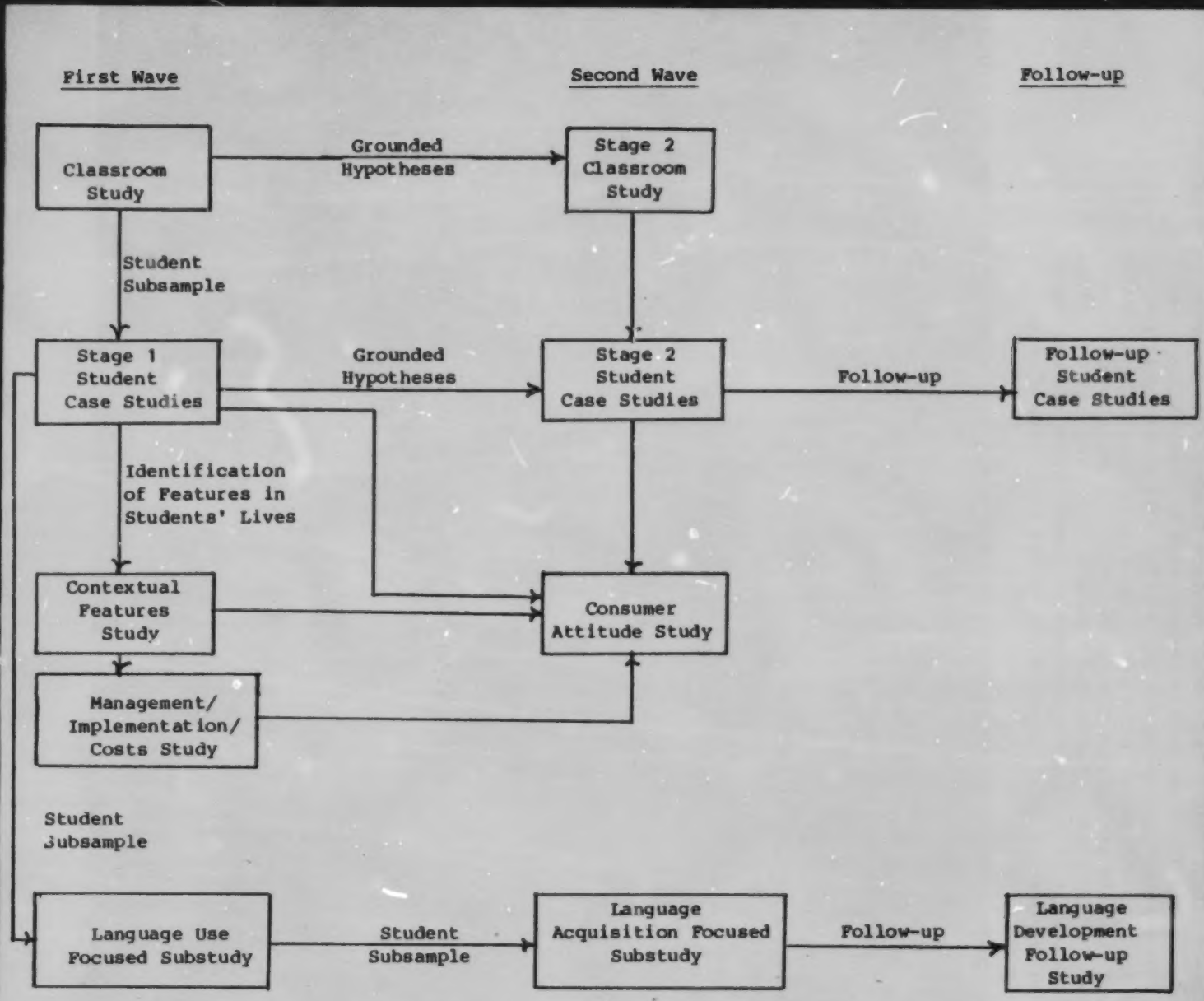

Figure 1. Interrelation of Study Modules and Study Calendar

bilingual features, e.g., the use of more than one language and instruction in cultural content areas.

The body of specifically bilingual research was surveyed as part of Task 2 of this planning study (see Planning Report 2). It was concluded that there exists an extensive framework of research identifying significant features in bilingual education. A classification of these features discussed in the literature is presented in Planning Paper 2. It was determined there are few informative and usable research data on the consequences of particular features of bilingual instruction for students. Therefore, studies of most features unique to bilingual instruction must be largely exploratory.

This suggests that data collection should combine confirmatory components that build on the best monolingual instructional research with exploratory components that examine the bilingual instruction process further. Case study and other qualitative techniques, especially classroom ethnography, offer the open approach needed for exploratory analyses.

The essential difference between Option 1 and 2 is that, in Option 2, the hypotheses founded on exploratory analyses are validated in a second wave of confirmatory analysis, using proven, fully implemented observation systems and a student test battery. Table 1 exhibits other attributes of the two waves of analysis planned for Option 2. Planning Paper 3 discusses attributes of bilingual education research needed to improve the existing knowledge base. Option 2 incorporates all of these attributes that could conceivably be included in a 2 1/2 year study. Among the advantages of this approach are the following.

(1) Option 2 provides <u>confirmed</u> knowledge, an advantage when results are to be applied to policy formulation and to improvement of instruction.

Table 1

Attributes of Wave 1 and Wave 2 Analyses

Wave 1	Wave 2
Combines exploratory and confirmatory.	Confirmatory.
Largely qualitative.	Merges quantitative and qualitative techniques.
Hypotheses are a product of the study.	Based on grounded hypotheses from Stage 1.
Excludes no languages on basis of instrumentation or generalizability.	Includes only those languages that can support a quantitative aproach.
Stresses process.	Stresses relations between process and product.
Most data to be collected without respondent burden.	Respondent burden is increased.
Language proficiency measures require clearance and must be delayed until Spring 1981.	Measurement battery must be cleared through FEDAC, CEIS, etc.
Observation systems are implemented in exploratory stages.	Observation systems are completely implemented and n in place.
Validates monolingual classroom study methods in bilingual education.	Uses validated bilingual classroom study methods.

(2) Option 2 includes a battery of tests and measures that could not be administered in the 1980-81 academic year. The process of instrument selection and/or development, FEDAC clearance, publication in the Federal Register, and approval by SEA and LEA authorities can probably not be completed in time for use before the 1981-82 year.

(3) The limits to generalizability (external validity) of qualitative analyses are not well established. There is no theory of qualitative generalizability to match that of quantitative generalizability, although Kennedy's (1979) article makes a useful stride in this direction. Results from the second option study would have proven external validity in well defined universes of interest.

(4) Large scale qualitative studies often produce unmanageably large amounts of primary data. The data are difficult to summarize in ways that a reader can completely trust. A system for reduction and organization storage and retrieval of qualitative data is needed, but requires time for implementation. The second plan provides an opportunity to develop such a system.

(5) The first option provides a firm basis for identifying features in Bilingual Education, but a poor basis for determining consequences for students. In the second option a full year is devoted to selection of measures of consequences, and allows for statistical analysis of relations between features and consequences. Although the first plan yields grounded hypotheses about consequences for students, it cannot provide as sound a guide for instructional improvement.

(6) In the second option students can be followed for two years instead of one, of advantage particularly for student case studies.

The Study Calendar under Option 2 is as follows.

Study Calendar (Option 2)

Stage 1 (Fall 1980 - Fall 1981) Roster schools, classrooms, and students; select subsamples within sites; collect case study, interview, and observational data; organize and reduce data for analysis. Develop and clear second wave instrument battery, confirmatory observation system, data storage/ retrieval system, and detailed study plan. Formulate grounded research hypotheses and identify areas that require focused substudies.

Wave 2 (Fall 1981 - Summer 1982) Analyze 1980-81 data for an interim report for the 1982 ESEA reappropriation hearings. Select school, classroom, and student subsamples within sites. Conduct focused substudies to answer specific first wave concerns. Collect case study, interview, questionnaire, and observational data for confirmatory analyses. Organize and reduce data for analysis in computer-based data retrival system.

Report Production (Summer 1982 - Fall 1983) Analyze 1981-82 data and integrate study results. Prepare final reports for Congress, for researchers, and for the general public, and translate results into "detailed, practical materials or guides for instructional improvement."

Follow-up (Fall 1980 on) Select the follow-up subsample, establish a student tracking system and collect baseline data as preparation for potential follow-up studies.

3. Components of the Instructional Features Study

This section presents an overview of a set of interlinking modular components that form the building blocks of the overall instructional features study. The modular approach was taken for two reasons.

First, as emphasized in Planning Paper 3, the study should be multi-disciplinary and multicontextual, and should consider a broad range of consequences for students. A comprehensive study of this nature must be divided into interlinking components in order to provide for efficient implementation, and organization of human resources. Several different contractors must be required to assemble the required range of multi-disciplinary talent. NIE will have several options in providing overall management and coordination (See Planning Paper 3, Section 5:

Second, the modular approach provides NIE with considerable design flexibility. Modules may be added, deleted, reorganized, or modified as seems appropriate on the basis of further in-house work and further input from consultants, NIE, the field verification effort, and other sources. Thus, while the presentation follows the format of the second basic study option, it can also be used for the first. Wave 2 study modules are either not performed or moved to Wave 1, while Wave 1 activities that specifically prepare for Wave 2 data collection are suspended.

Three types of study modules have been identified:

(1) Core Studies bear directly on major products. Any of these studies but the first Wave Classroom Study (see below) could be eliminated, although there would be loss of new knowledge produced.

(2) Focused Substudies concentrate on particular areas of interest Although each proposed study yields new research knowledge, the knowledge is not indispensible in achieving the major study objectives. The studies identified here are only suggestions. Others should undoubtedly be performed to asnwer specific questions that arise in the course of the research.

(3) Follow-up Studies are longitudinal studies that must be set up in the first two years of the features study, even though their ultimate funding is not assured. Although longitudinal studies seem indispensible in determining the ultimate consequences of bilingual education, AAI is aware that extensive new longitudinal research is not in NIE's current agenda. However, initial preparations should be made in order not to close out future opportunities.

The next few pages present brief synopses of study modules identified so far. They are to be regarded as an initial list advanced to elicit discussion and to begin a process whose goal is consensus about research needs. Figure 1 provides a diagramatic overview.

Wave 1 Core Studies

There are four core studies in the Wave 1 design. The first three examine instructional and contextual features in several domains: classroom, school, neighborhood, and community, while the fourth examines management, implementation, and cost features consequences for students that can be identified and tentatively related to significant features. Grounding for specific hypotheses about consequences for students will be produced. Knowledge to be developed wil be used in writing an Interim Report for the 1982 ESEA reappropriation hearings. If NIE adopts Option 2, detailed plans will be developed for further data collection, storage, retrieval, and analysis.

(1) First Wave Classroom Study

The objectives of the classroom study are (1) to observe a large part of the spectrum of bilingual education instructional phenomena from several perspectives, (2) to develop a parsimonious framework of significant features that adequately describe observed phenomena,* and (3) to develop grounded hypotheses about consequences of significant features for students.

The physical domain of the classroom study is the classroom and its immediate extensions (gym, playground, lunchroom, etc.). Data are obtained through interviews and questionnaires, language proficiency testing of students, materials surveys, informal observtions, and formal observations. There are three components of data collection and analysis: (1) Classroom (and environs) focused, (2) Adult focused, and (3) Student focused.

Observation systems combine three approaches: (1) instructional dimensions methodologies based on previous successful monolingual studies; (2) classroom macroethnography, building on previous bilingual studies; and (3) traditional, exploratory classroom microethnography. If NIE selects Option 2, the First Wave Classroom Study is followed by a follow on verificational study in the 1981-82 study year.

(2) First Wave Student Case Study

The objectives of this study are (1) to extend the domain of consequences for students beyond those that are immediately observable or measureable, (2) to explore the meaningfulness of particular features of bilingual education in the lives of students, (3) to extend analyses beyond the classroom and its environs, to include contextual features of the neighborhood and community, and (4) to formulate grounded casual hypotheses about the consequences of particular features for students and (5) to examine equity issues from the perspective of these students. The student

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*Refer to the second Definition of "Significant", Planning Paper 1.

case study sample consists of a large, highly stratified subsample of the first wave sample, conforming to Kennedy's (1979) criteria for generalizabilty. All primary and secondary grades will be represented. Retrospective histories and current data about the lives of the students will be collected. Where access is possible, the students' school records will be utilized. Data will include not only the formal educational experiences of students, but also broad patterns of outside-class time use. Community institutions that matter in the lives of the students will be surveyed and used as the base for the Contextual Features Study (see below). If Option 2 is selected, the First Wave Student Case Study leads into a second wave verificational study, and (potentially) a longitudinal follow up study.

(3) Contextual Features Study

This study concentrates on a survey of those contextual features in the neighborhood and community identified as important in the lives of students. Interest focuses on community bilingual educational resources (like those in Fishman's (1979) inventory) and their role in education of language minority students. In this study the student is seen as the center of an overall support system that includes the monolingual or bilingual school as one particular component. Data will be collected, with the assistance of participant researchers, through ethnographic and anthropological approaches. One such study is to be conducted in each of the LEA's or other major study units. The study will produce a framework of significant contextual features and grounded hypotheses about their consequences for students.

(4) Management/Implementation/and Costs Study

This study concentrates on administrative style and funding of the contextual features and study. The degree of program control by administrators outside the classroom, relative to implementation by teachers and aides, will be examined. Annotated flow charts of administrative policy

and the financial consequences of the administrative allocation processes will be noted. Information will be collected via structured interviews of a significant sample of administrators at all levels of the educational system, and through published reports and other materials.

Wave 2 Core Studies

There are three core studies in the Second Wave design. Two of the studies (Wave 2 Classroom, Student Case Studies) extend and verify their Stage 1 counterparts. The third (Consumer Attitude Study) extends the domain of inquiry. The latter study cannot be conducted as part of the first wave because of its extensive dependence upon development and clearance of new instruments.

Wave 2 Core Studies

None of the following studies would be performed under Option 2, with the possible exception of the Consumer Attitude Study. This study could conceivably be moved to the 1980-81 academic year, although preparation of instruments would be problematic.

(1) Second Wave Classroom Study

The objective of this study is to confirm and extend the conclusions of the First Wave Study, so that their external validity can be demonstrated as a basis for policy formulation and improvement of bilingual instructional practices. The first wave analyses will provide (1) a framework of identified significant instructional features, (2) scales and observation techniques to assess these features, (3) grounded hypotheses about consequences for students, (4) instruments and observtion procedures to assess consequences for students, and (5) a highly organized data storage and retrieval system. These provide the research base for the 1981-82 study.

The data collection system will include classroom focused, adult focused, and student focused components. Variables to be measured are from macroethnographic, instructional dimensional, sociolinquistic, and psychometric domains. The descriptive framework of significant instructional features will be confirmed. Through statistical analyses, the consequences that specific features have for students will be determined. The knowledge made available will be reconciled and combined with that from student case studies to provide practical information for improvement of instructional practices.

(2) Second Wave Student Case Study

The objective of the Second Wave Student Case Study is to validate or invalidate each hypothesis from the First Wave Student Case Study, and to verify the identification of significant features and consequences for students. It is a companion study to the more quantitative but narrower Classroom Study. It will be based on an extended sample to provide new subjects for verification of results, to minimize particularity, and to establish a base where generalizable, causal conclusions are justified. Results will be integrated with those from the Classroom Study component.

(3) Consumer Attitude Study

This study focuses on parents, teachers, school administrators, community people, political figures, bilingual education administrators, and other bilingual education "consumers," and their attitudes towards themselves and each other; home, school, neighborhood and community; L1 and L2 and their varieties; L1 and L2 cultures; and specific instructional features in bilingual education. Data will be collected via interviews, questionnaires, and informal observations by participant researchers. This study can be regarded as an extension of the Contextual Features Study proposed for the 1980-81 academic year.

Focused Substudies

Wave 1

(1) Language Use Focused Substudy

This study is designed to capture language use of language minority children inside and outside the classroom, and focuses on language as a part of communicative competency. Because standardized tests are not used, the study can involve any of the languages included in the study--not just those with adequate instruments for measurement of language proficiency. The results will be used to help identify socio-linguistic consequences for children, especially outside the classroom environment, and to formulate hypotheses about features that lead to these consequences.

Wave 2

(1) Language Acquisition Focused Substudy

The objective of this study is to produce information about language development (L1 and L2) in relation to bilingual education project features. Data to be collected will include vocabulary inventories in L1 and L2 as absolute measures that do not present scaling problems. If possible, either absolute measures will be constructed. Cross-sectional and longitudinal data from the 1981-82 academic year from several grades will be combined to produce a picture of the overall longitudinal process. The sample will consist of all or part of that used for the Language Use Focused Substudy, possibly concentrating on a single language. The data will be used to explore further the specifically linguistic consequences of bilingual education programs for students.

Wave 1 or Wave 2

(1) Focused Ethnographic Studies

The three ethnographic studies currently funded by NIE exemplify this set of focused substudies. These studies can be conducted at any stage of the overall study, and are designed to focus on areas that raise special research issues. NIE may wish to issue further RFP's that respond directly to questions raised in First Wave Analyses. Some of these could be integrated with the Instructional Features Study by sharing study sites or even samples.

Follow-up Studies

The following are only two preliminary ideas about follow-up studies. A detailed presentation of Follow-up designs will be formulated in Task 7. These will be discussed in the final report of this planning assistance contract.

(1) Language Development Study

This study concentrates on the interrelation of L1 and L2 language acquisition and cognitive development from the Piagetian perspective. One objective is to test Cummin's (1979) hypotheses of an L1 threshold effect and perhaps to detect causal relations among the domains cited. Multivariate time series data will be collected beginning in the first wave and continuing for several years thereafter. The analysis extends that of the proposed Language Acquisition Substudy.

(2) Follow-up Student Case Study

The objective of this study is to determine some of the longer term consequences of bilingual education programs for students, both quantitative

and qualitative. The study thus extends the domain of consequences that can be considered. Students will be tracked longitudinally to study the continuity of their educational experiences and to examine the consequences of bilingual education on life chances, especially in regard to access to mainstream education. The First and Second Wave Student Case Studies provide a baseline for the follow-up longitudinal study.

4. Sample Design

4.1 Scope of the Sample

The discussions presented in Planning Paper 3 point to a study consisting of an amalgam of quantitative and qualitative analyses. While qualitative analyses are usually thought of as small in scale, small scale data bases are not appropriate for analysis that must be generalized to broad universes. In the case of the instructional features study, results must be translated into materials for improvement of instruction, and must address concerns of the 1952 ESEA reappropriation hearings. Generalizability is thus an absolute requirement. As discussed in Planning Paper 3, there are several attributes of samples that provide a base for generalizability of qualitative case studies. These are (1) inclusion of wide range of attributes across cases, (2) inclusion of almost all attributes that occur in the population to which results must be generalized, and (3) inclusion of few unique attributes in the sample (i.e., avoiding the particularistic). These criteria call for a large, national scope sample for the instructional features study, whether it is quantitative or qualitative. The criteria required of the sample, and the ability to generalize, depend more on characteristics of the sample in relation to the population of interest, than on the quantitative or qualitative nature of analyses.

In the instructional features study, the population of interest is that of language minority students in the U.S., their schools, and their system of support for the community.* This population is so large and diverse that the scale of the study, in order to include the wide range of attributes that characterize the population of interest, must be national in scope and large in scale. The sample design, in other words, should

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*See Planning Paper 1, Section 2.2.

satisfy the same criteria demanded of designs for quantitative analysis, and be given the same careful attention in design. This is not typical of the majority of case study designs.

The total scope of the sample frame will follow the definition of bilingual education that NIE adopts. In Planning Paper 1, (Section 2.2) three alternatives were presented, as follows:

(1) Title VII Bilingual Education Projects.

(2) All public or private school projects where instruction occurs in more than one language.

(3) All schools or other institutions where education occurs for linguistic minority students, whether in bilingual education projects or not.

The sample frame would be constructed by three alternative, corresponding, means:

(1) Title VII files.

(2) Title VII files LEA and SEA lists, parochial school lists.

(3) Public and private schools with linguistic minority children (identified from the Office for Civil Rights (OCR) Survey), supplemented by LEA and parochial school records.

These options are discussed in detail in Planning Paper 3 (Section 2.1). The study designs presented in this report can be adapted to whichever scope NIE selects. However, AAI recommends the third definition be adopted in order to capture the widest range of educational experiences for linguistic minority students.

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*See Planning Paper 3, Section 3.2.

4.2 The Primary Sampling Unit

The primary sampling unit (PSU) is the largest building block of the multistage sample required for the instructional features study. For example the PSU might be an LEA or city, within which are nested samples of students, classrooms, and schools. The PSU can either be (1) an area, such as a city, county, reservation, LEA, or community; or (2) the bilingual education project (however defined). The discussions of Planning Paper 1 and Planning Paper 3 support selection of an area as PSU, for the following reasons.

(1) Selection of the LEA or some other area as PSU is most compatible with the contextual case studies to be performed. Three alternative substudies involve program features at the city or LEA levels: the Contextual Features Study, the Consumer Attitude Study, and the Management/Implementation/Costs Study. It makes design sense to choose the PSU to be the same as the unit of analysis of these contextual studies.

(2) If the project is the PSU, each LEA, SEA, and sponsoring agency involved must be contacted to seek acceptance of the study, and to serve necessary permissions. It has become apparent in field visits conducted so far that securing the cooperation of local administrators, parents, and classroom personnel will not be easy. This task must be conducted top down from the SEA to the LEA and finally to classroom teachers and parents. By selecting the geographic subdivision or LEA as the PSU, site development work is simplified and lessened.

(3) Organization of data collection is simpler if local site offices are set up to service clusters of study participants. LEA personnel could be hired as participant researchers who were involved with data collection from a number of projects. Total study costs will be less if the geographical/political subdivision or LEA is selected as PSU.

(4) If projects are selected as PSU's, then bilingual minority students who are not in bilingual education projects would be excluded, contrary to the recommendations made in Planning Papers 1 and 3.

(5) It will be enormously time consuming to assemble a sample frame that includes all projects, because of the large number of sponsoring agencies involved, and the uneven record keeping typical of such agencies. If an area is PSU, projects and other educational and community resources need be inventoried only for places actually in the sample.

This case is so strong that projects will not be considered further as potential PSU's. These options--the geographical/political subdivision, the community, and the LEA--are discussed below. Table 2 shows how other sampling stages are nested within the primary sample.

Option 1 (Geographical/Political Subdivision)

The PSU in this option may be a political subdivision (city, county, Tribal Reservation), a census subdivision (SMSA, Urbanized area), or any other large scale geographical area.

The sample frame is constructed from a variety of sources including census data, OCR data on numbers of bilingual education students and LEP students, Title VII project data, SEA and LEA data, etc. Each place in the sample frame is characterized by the range of language and cultural groups served, numbers of projects, student characteristics, socioeconomic characteristics, social characteristics, presence of recent immigrants, and other analytically important stratitifiers. The sample frame will be organized according to the desired stratification plan (discussed below.)

Option 2 (Community)

Large cities usually host several language/cultural communities of interest in studies of bilingual education. For instance,

Levels	Options		
	1	2	3
Geographical/Political Subdivision	Primary		
Community	Secondary	Primary	
LEA	—	—	Primary
Project	Tertiary	Secondary	—
School	Fourth	Tertiary	Secondary
Classroom	Fifth	Fourth	Tertiary
Teachers, Students	Sixth	Fifth	Fourth

Table 2 Options for Selection of Primary and Higher Order Sampling Units

the San Francisco - Oakland area contains Chinese, Korean, Mexican-American and several other communities. A sample frame of communities will be constructed by the same techniques used to construct a sample frame of places, although the effort would be more time and resource consuming, and community boundaries are usually vague.

Option 3 (LEA)

A sample frame of LEA's can be drawn up using the Office for Civil Rights (OCR) Survey file, and NCES data. The 1976-77 OCR file, described in detail in Planning Paper 3, includes all LEA's in the United States. Data include the number of Limited English Proficiency (LEP) students and the number of students receiving bilingual education or ESL, broken down by ethnic group. In certain cases, contiguous LEA's can be lumped to provide larger study units.

The actual sample selection process is the same under any of these three options:

(1) A list of candidate places will be purposively selected from the sample frame, and these places investigated further. Site visits will concentrate on availability of data; research plans of the LEA, SEA, and local project; feasibility of hiring local participant researchers; legal requirements; and the likelihood of cooperation with the study (at all levels from LEA administrators to classroom staff). Additional data from printed sources or computer tapes will be appended to the file. The data will be interpreted in the light of the stratification plan desired (see below). Options would be discussed and debated, and "soft" data considered.

(2) A list of sites will then be purposively selected in coordination with NIE. Flexibility about the number of sites in the final design can be obtained by prioritizing the list of sites that fall into each cell of the stratification design.

The LEA or group of continuous LEA's appears to be the strongest choice, for the following reasons.

(1) Although the community is a good choice from the perspective of community contextual studies, studies of administration/implementation/costs would still need to consider each LEA involved in the sample. It would be much more difficult to construct a sample frame of communities than, e.g., of cities, counties, or LEA's. It is preferable to select certain communities within LEA's or other units for special study focus. Furthermore, not all linguistic minority students live in communities. These more isolated students are analytically important and should not be excluded.

(2) LEA's and cities or other political subdivisions are often non-coterminous, especially outside the East. A given city or county may include portions of several LEA's. In order to include a city or county as PSU, very complicated liaisons and site development work would be required. The LEA is the "cleanest" unit to deal with.

(3) The LEA sample frame is easy to construct, using the OCR survey files.

The 1978-79 OCR file is not yet available but will be in time for the features study, according to Neal Kellalea of Kellalea Associates. This file includes only a probability sample of LEA's (including nearly every large LEA, however) but, for each LEA selected, it includes all schools. This would make subsampling of schools simple as well. The data would be amended by annexing parochial and private schools within LEA's actually selected.

The 1977-78 OCR file includes every LEA in the U.S. but is somewhat dated. Since the distribution of different kinds of students is not to be used analytically, but merely as a guide in selction LEA's for study, this is not a serious fault.

In any case, AAI recommends that the sample of PSU's, i.e. major study sites, be purposive, not probabilistic. While the sample should be stratified to include representatives of several important strata (see below), choices should take into account many factors that could not easily be considered in a rigid statistical way. Selections of schools, classrooms, and students can still be be probabilistic.

4.3 Student Stratification Design

The student sample will be selected as part of a multistage sampling procedure. In order to assure that a variety of student characteristics is represented, and that generalizations can be made for each group of interest, a stratification plan for students is required. The variables that are most important in stratifying the student population follow.

(1) Language and Cultural Group
(2) Language Proficiency (L1, L2)
(3) Age and Grade
(4) Previous bilingual education experience
(5) Date of immigration (if foreign born)
(6) Enrollment in Bilingual or Monolingual education
(7) Home Language (L1 or L2)
(8) Predominant Community Language (L1 or L2)
(9) Ethnicity
(10) SES

Although the student sample is the last stage, PSU-level distributions of student characteristics must be considered from the beginning. Data reflecting these distributions must therefore be obtained and used in site selection.

4.4 Language Stratification

NIE has stated to AAI that its objective is to produce study results that apply to a wide range of language and cultural groups. However, only a few such groups appear to be good candidates for quantitative, generalizable studies, for two reasons: (1) many languages lack an adequate number of projects for statistical generalizability; and (2) many languages lack adequate language proficiency* measures. Four languages with adequate measures have been tentatively identified as (a) Spanish, (b) Navajo, (c) French, and (d) Chinese. A more intensive survey of available instruments will be made as part of Task 6, and this list extended, if possible. To reconcile the need for widespread applicability to different language groups, and for adequate analytic bases, the study should differentiate between "generalizable" groups and other language groups, but not exclude the others.

The number of languages that can be included is also limited sharply by the total resources to be available - approximately 40 F.T.E. for each academic year (1980-81, 1981-82). The analytic approach suggested in this report requires at least two ethnographers from each language/cultural group to be employed over both waves of the study. The projected scale of the study would make employment of more than about 16 ethnographers problematic and probably infeasible (considering the many other skills that must be represented). About 8 of these ethnographers should represent the 80% of bilingual education that is Spanish/English, in four major geographical areas - Southeast, Middlewest, West and Southwest, and Northeast. Thus only four other languages could be accommodated. It is AAI's suggestion that they include the languages listed above (Navajo, French, and Chinese), and a fourth to be identified. Those most frequently suggested in conversations with researchers and consultants are Asian languages, e.g., Vietnamese, Filipino, or Korean. The language stratification that results is

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*See Planning Paper 3, Section 3.2.

given in Table 3. These languages will be referred to as "primary study languages," i.e., those for which specific personnel would be hired and elaborate proficiency measurement instruments acquired. Students from nonprimary language groups cannot be studied with the same depth linguistically.

1. Spanish (Southeast)
2. Spanish (West/Southwest)
3. Spanish (Midwest)
4. Spanish (Northeast)
5. French or other European language
6. Chinese
7. Navajo
8. Vietnamese, Filipino, or Korean

Table 3. Primary Study Languages.

The study sample would concentrate on each of these strata about equally, resulting in a study that is about 50% Spanish/English. The best available proficiency measures would be selected and used in the study for each language. Because of the time required for obtaining clearances (CEIS, FEDAC, SEA's, LEA's), first wave measurements may be delayed until near the end of the school term but (the consensus among persons consulted) should be made if at all possible. The usefulness of language proficiency measures for the study is discussed in Planning Paper, Section 3.3.

As discussed below, it is recommended that the basic study unit be an LEA or other geographical/administrative area.

The primary subjects of study are the language minority students in these areas, and the schools these students attend. While a particular PSU (Example: District 4, NYC) may be selected because it represents one of

the primary strata (in this example, Puerto Rican students), it will often include many other language minority students. It would not be feasible to develop or adapt proficiency tests for all languages included in the basic study units. It would be feasible to include all such languages in the study, however, as a subset for more restricted analyses. While generalizations could not be made for these language groups, they are a part of the population of the study unit. Their presence should probably not be ignored as a particular feature of bilingual education in the LEA.

4.5 PSU Stratification Design

Selection of PSU's should be stratified to insure inclusion of a wide range of project and student characteristics and representativeness of the sample. Only a small number of stratifiers can be used, since study resources limit the number of sites that can be included to approximately 16. The key stratifiers are:

(1) Predominant Language/Geographical Area
(2) Urban/Rural
(3) Large, medium, and small LEA's.

Use of these factors factorially would result in 48 strata (8 x 2 x 3). A few of the 48 strata might represent so few students that they could be eliminated, but the number of strata is still at the upper limit of the anticipated scale of the instructional features study. But other factors should also be taken into account, including the following.

(1) Small, medium, and large fractions of language minority students.
(2) Existence of multilingual as well as bilingual projects.
(3) Existence of projects of different ages.
(4) Existence of projects with different philosophical orientations.
(5) Existence of wide ranges of student characteristics.

If all of these factors are used simultaneously as stratifiers there will be far too many strata. We suggest that only one strict stratifier be used: language/geographical area, as listed in Table 4. The total number of sites could then be 8, 16, 24, 32, etc., depending on available resources, and per-site cost estimates. Selection of the 1, 2, 3 or more PSU's per stratum would take the other stratifiers into account. For instance, large, medium, and small LEA's would all be represented, but not necessarily separately within each language/geographical area stratum. Each other important factor would also be used in this way. Such a sample is best selected purposively, in close cooperation with NIE. AAI recommends (see Section 4.8 below) that site selection be performed as part of Task 6 of this planning assistance study and turned over at the start-up of the instructional features study to the successful contractor or contractors.

4.6 Classroom, Teacher, and Student Samples

After primary sampling units are selected and the appropriate authorities have agreed to cooperate, subsampling is conducted. This would happen as soon as possible after startup of the major study. This effort begins with rostering of classrooms, teachers and aides, and students, and their characteristics. Then a stratified purposive or probability sample is selected. A detailed subsampling plan will be developed as part of Task 6 of this planning study. Some guidelines in preparing the plan are as follows.

(1) Although the sample should concentrate on earlier grades (K-3), where most instruction in the home language occurs, grades K-12 should be represented. This will enable examination of the continuity of bilingual education and bilingual education targeted towards older, immigrant students. Nearly every researcher or practitioner that AAI has spoken with concurs in this point (which is also discussed in Planning Paper 3).

(2) In a sizable sample of schools, at least one grade from each class represented in the school should be selected, to allow examination of the continuity of programs through the grades, and entry-exit criteria between bilingual and monolingual classrooms.

(3) In general all adults in a given classroom should be included in the sample, in order to reflect each classroom job role.

(4) The student selection plan should be stratified to ensure adequate representation of all language proficiency (L1, L2) groups and other important groups of students.

4.7 Definition of Linked Study Samples

The different components of the overall study are linked through their respective study samples, to produce cohesion and to provide the opportunity for cross-validation. This section presents definitions for each sample and subsample, and indicates which is to be used for each study component (see Table 5). For convenience of presentation, the PSU is assumed to be the LEA.

Overall First Wave Sample

The overall first wave sample is a nested multistage sample of students, teachers, classrooms, schools, and LEA's. Other first wave samples are subsamples from the overall sample or levels of the overall sample (e.g., all teachers). The sample is stratified according to the plans discussed earlier in this section. The student lies at the center of three partially overlapping but different contextual nests, educational, political, and social, symbolically represented in Figure 2.

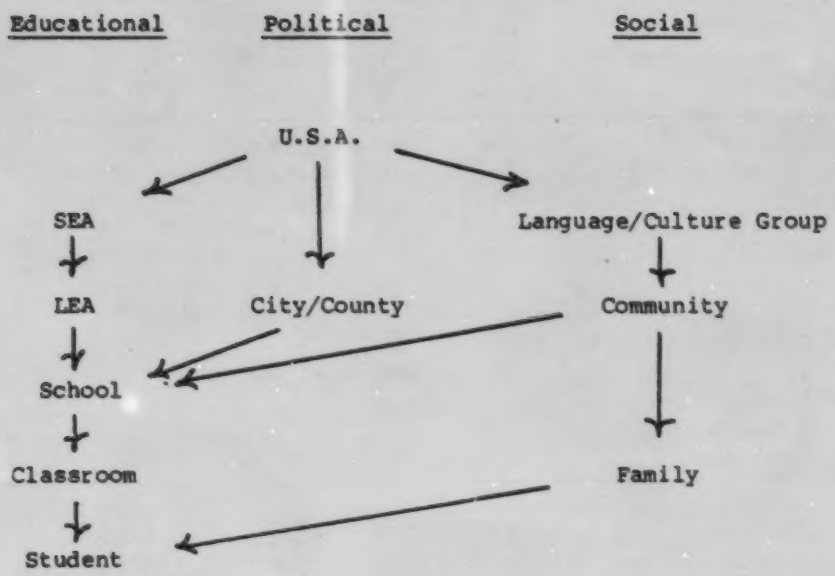

Figure 2.

Interrelation of Social, Political, and Educational Sample Frames

Overall Second Wave Sample

The second wave sample is intended for confirmatory analyses of first wave hypotheses, and formulation of generalizable conclusions. Although it will involve the same sites (PSU's) as the first wave sample, it may include an extended sample of schools, classrooms, teachers, and adults in order to provide new subjects for validation of hypotheses, and to provide a large research base for generalizable conclusions. Part of the sample will compensate for anticipated attrition of the first wave sample. The precise plan for the second wave sample will be formulated during the first study year and implemented at the beginning of the second.

First Wave Case Study Sample

This sample is a large stratified subsample of the overall first wave student sample, intended to include a wide variety of student characteristics in a wide variety of educational environments. It would include students from both the primary study languages (Table 4), and secondary languages (i.e., those included but not emphasized in the study).

Second Wave Case Study Sample

This sample consists of the first wave case study sample extended to include a new subsample of students from the overall Second wave overall sample. It is to be used for verification of hypotheses formulated in the First Wave Case Study.

Language Case Study Sample

The language case study sample consists of a subsec of the first wave student sample, selected for substudies focusing specifically on language.

Follow-up Case Study Sample

This sample is a subset of the first wave case study sample. These students are to be tracked longitudinally for follow-up studies.

Table 4. Samples for Study Components

Core Studies		
First Wave Classroom Study	1980-81	First Wave Classroom Sample
First Wave Student Case Study	"	First Wave Case Study Sample
Contextual Features	"	All Study Units
Management/Implementation/Costs	"	All Study Units
Second Wave Classroom Study	1981-82	Second Wave Student Sample
Second Wave Student Case Study	"	Second Wave Case Study Sample
Consumer Attitude Study	"	All Study Units
Focused Substudies		
Language Use	1980-81	Language Case Study Sample
Language Acquisition	1981-82	Language Case Study Sample
Focused Ethnographic	1980-83	Varies as appropriate
Follow-up Studies		
Follow-up Case Studies	1980 on	Follow-up Case Study Sample
Cognitive Development	1981 on	Language Study Sample

4.8 Schedule for Site Selection

The part of this planning assistance study of direct use to NIE in writing RFP's will close on March 1, 1980 when the field verification report is submitted. At that time, AAI will turn to development of more detailed designs and specifications for instruments (Task 6) and development of Follow on designs (Task 7). It appears feasible to make tentative selections of sites for the study as part of Task 6. This would be appropriate under the task description given in the RFP. Initial site development work can be performed as part of the effort. The study itself would begin by making final site selections and proceeding immediately to rostering and selection of subsamples. The time savings incurred in the actual study make this plan attractive.

5. First Wave Design

This section presents more detailed discussions of analyses proposed for the 1980-81 academic year. It is assumed that a two-wave data collection plan will be adopted. However, if NIE decides to collect data for only one year, then the design can easily be modified by eliminating 1980-81 activities intended only as preparation for 1981-82 data collection. It is also assumed that tentative site selection and construction of a detailed sample design will be completed in cooperation with NIE as part of this planning assistance study. The sample plan would be formatted as a complete package that could be used by any successful contractor for the instructional features study. The study itself can then begin with sites in place, and initial site development work complete.

The design presented here minimizes the use of instruments that require development and clearance through FEDAC and CEIS. The use of formal and informal observations (imposing no respondent burden), interviews, collection of existing records and materials, and other non-intrusive data collection is emphasized. One area where tests are required, however, is that of language proficiency tests. These are judged by our consultants to be essential in both waves of data collection. Ideally, the primary languages to be included will be tentatively identified by AAI and NIE during this planning assistance study. Then the process of obtaining clearances for proficiency-testing can begin in time for administration relatively early in the 1980-81 academic year. Otherwise a delay to Spring 1981 might easily occur.

The following activities are included in the 1980-81 study year.

(1) Roster schools, classrooms, teachers, aides and students as a frame for subsampling.

(2) Conduct school level site development, including education of school personnel, parents, and students about the

study. Recruit local participant researchers. The non-intrusiveness of the first wave design, and the opportunity to resign from the study prior to the second wave would be emphasized.

(3) Conduct five interlinked study components as follows.

(i) First Wave Classroom Study
(ii) First Wave Student Case Study
(iii) Contextual Features Study
(iv) Management/Implementation/Costs Study
(v) Language Use Focused Substudy

(4) Develop an integrated framework of significant features, consequences for students, and grounded hypotheses about the consequences for students of particular instructional features.

(5) Develop the second wave multidisciplinary classroom observation system through refinement of the first wave system. Develop data reduction techniques.

(6) Develop the second wave instrument battery and overall data collection plan. Obtain necessary approvals and clearances for use in the 1981-82 academic year.

(7) Develop a design for the second wave data storage and retrieval system.

(8) Develop detailed second wave study management plan.

The following sections detail the five interlinked study components in turn.

5.1 Stage 1 Classroom Study

The purposes of the Stage 1 Classroom Study are (1) to explore the natural distribution and phenomenology of bilingual instructional features, (2) to construct a descriptive framework of significant features that parsimoniously captures the range of phenomena observed, (3) to construct scales for these features and to validate them, and (4) to develop grounded hypotheses about the consequences of these features for students. The First Wave Classroom Study, the Student Case Study and the Contextual

Features Study are companion studies. Results from these studies will be integrated for the interim report for the 1982 ESEA reappropriation hearings.

5.1.1 The Study Sample

The classroom study is based on the first wave multistage sample. Results will be generalizable to most of the universe of bilingual education projects identified in a working definition to be selected by NIE (See Planning Paper 1). The results will not apply directly to every language and culture. The study must concentrate on a few primary language groups to fit within the anticipated budget and still maintain desired analytic depth. Cautious generalizations outside the primary language group might be made by researchers familiar with the detailed results of the study and the language/cultural groups involved.

5.1.2 Data Collection

Data will be collected from a variety of sources and perspectives. The observation system to be implemented during the course of the study year is in most respects an experimental prototype of the second wave system to be installed in 1981-82. This complex system is likely to present some difficulties in implementation. Thus, although first wave research will produce grounded hypotheses, it is also an experimental trial of data collection systems.

Table 6 presents an outline of the components of the first wave data collection system.

Table 6

Breakdown of First Wave Data Collection Components

1. Interviews and Questionnaires

   Administrators
   Teachers
   Teacher-Aides

2. Materials Inventory

   Classroom Descriptions
   Classroom Equipment Inventories
   Instructional Materials Inventories

3. Student Records

   Academic Records
   Absences
   Disciplinary Actions
   Grade Retention

4. Formal Observations

   Participant Research
   Core Study Staff

5. Formal Observations

   Microethnographic
   Classroom Ethnographic/Instructional Dimension

The following sections discuss these components in greater detail.

Interviews and Questionnaires

Interviews and questionnaires administered to teachers, teacher-aides, specialists, and administrators would address at least the following areas, to be expanded as planning proceeds.

(1) Enumeration and description of programs and services offered language minority students and corresponding placement systems.

(2) Description of entry-exit practices between monolingual and bilingual classrooms.

(3) Descriptions of classroom level organization, including numbers of teachers, teacher-aides, and students by language/culture; subgrouping and individualization practices; adult and student role definitions and basic participant structures.

(4) Description of inservice training.

(5) Descriptions of administrative practices.

(6) Description of testing and evaluation practices.

Materials Inventory

Each study classroom will be measured and diagramed, and all activity spaces identified. An inventory of equipment and materials will be taken. At intervals, current instructional materials will be sampled - including published materials, locally produced materials, and teacher plans. The interpretation of materials specifically includes posters, students' displayed work, and blackboard writing.

Student Records

Where permitted, student records will be obtained. The feasibility of doing this will be examined in the field verification effort to be conducted in February 1980. The records would be valuable as attachments to case histories to be collected for the Student Case Study.

Informal Observations

Participants in the local educational process - e.g., teachers or teacher-aides - should be employed as paid consultants. These persons will be trained and considered as full-status members of the research team. They would assist in interpreting observational data and in producing site level case histories, in coordination with core contractor study staff.

Formal Observations

The bulk of the data collection effort envisioned for the instructional features study consists of a large scale observation system to be implemented during the course of the 1980-81 academic year. The data to be generated will be useful to ground hypotheses and to define frameworks of consequences and significant instructional features. However, the system itself will evolve throughout the year and will only be complete at the end of the year. The revised, streamlined, fully implemented system will then be in place for second wave data collection and analysis.

The first wave observation system consists of two principal components. The first is traditional microethnography, to be conducted by a large staff (perhaps 16) of ethnographers from the primary language/geographical groups. The microethnographic component is part of an entirely exploratory, phenomenological approach to constructing a framework of significant educational features. This component would be discontinued after the 1980-1981 study year. The variables and hypotheses produced through microethnography will be used to help refine and improve the design of the 1981-82 data collection system.

The second formal observation component combines three related methodologies. The first is the classroom macroethnographic approach, as conducted (e.g.) by Erickson, Carrasco, and Maldanado-Guzman (1979), or by Mehan (1979). In this methodology, descriptions of interactions are

embedded within distinct participation structures. The second component is the instructional time use methodology developed by Berliner and Wiley, and implemented in the BTES study. The third component is the instructional dimensions approach implemented in the Instructional Dimensions Study (Leinhardt, 1977b). The integration of these methodologies will require time for development and implementation. It will contain exploratory elements when first implemented but these will gradually yield to systematic, confirmatory observations as the 1980-81 academic year progresses.

The following sections discuss the two observational components in detail.

5.1.3 Microethnographic Analyses

The classroom microethnographic study is intended to provide an open record of classroom phenomenology on which to base identification of significant classroom features, and scales for the associated variables. The scales are to be used in the second wave data collection and analysis. The effort requires about 16 ethnographers if eight primary language/geographical groups are included in the study. One plan for hiring the ethnographers is to identify graduate students in ethnography or anthropology and to hire them for one to two year terms. The work they do for the study would then provide the data for doctoral dissertations. Each will require at least one month of training before they can begin site-level operations.*

Microethnography requires no special instrumentation. Each observation results in a formal, line-numbered, prose protocol. The following exhibit from Berliner, Tinkunoff, and Rist (1975) illustrates one page of a completed protocol.

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*An estimate provided by Robert Carrasco.

Protocol Number: 23
Name of Researcher: F. D.
Date of Observation:
Subject of Observation: Formal Observation of Mrs. M Fifth Grade Class

1. Solo Observation of Reading
2.

8:48/1

3. 19 students are present, ten boys, five Chicanos.
4. The time is 8:48, the noise level is 1. The class
5. comes in and immediately goes to their seats. The
6. teacher is standing in front looking at the class.
7. Kurt, who sits all the way in front on the left, is
8. talking loudly with Mark. The teacher is saying nothing
9. to him, but is looking at him irritatedly. The teacher's
10. initial comments to the class involve asking where
11. various people are today. Many people are absent
12. today, about five, I believe. She says in a quiet
13. conversational tone, "Since Chris isn't here today, the
14. Vice-President will have to lead the pledge." Pam, the
15. Vice-President, comes to the front of the class and
16. says, "Stand." After this the teacher calls for the
17. secretary to come up to put up the results of the Lunch
18. Count. Pamela calls out every name in the class, as in
19. Roll Call. When people are called on, they say whether
20. or not they want to buy hot lunch, just milk, or no
21. lunch. After this the teacher introduces me briefly.
22. After this the teacher says that Mrs. H class can
23. go. The lower half reading voice of Mrs. M class
24. goes over to another classroom, while Mrs. M
25. gets the lower half of the other classroom.
26. Between the time and Mrs. M half leaves and
27. the other half arrives, nothing much happens. Mrs.
28. M is talking to the T.A. The others come in
29. and take their seats. Somebody has already put paper
30. around all the tables for people to use, just blank
31. paper. Now that everyone has taken their seats, Mrs.
32. M asks, "Sean, why don't you pick up the papers that
33. aren't being used?" He goes around and picks them up
34. from all the empty seats. Now with this change in
35. students, the classroom has 19 students, 9 girls,
36. five Chicanos. She gives assignments to the class.
37. There are two different groups in the class, Open High-
38. way and Sleek Otters, these being the names of the
39. respective books. Each group has its own assignment.
40. Carl comes in late from the other class. The teacher
41. says, "Sit down and open your book." The teacher
42. compliments the class on their improvement in their
43. spelling tests. Now it's time for the entire class to
44. review for the coming spelling test. This is among the
45. assignments that are written on the board. Since it's
46. Monday, and the final test for the spelling words will
47. be on Friday, the teacher reads the words to the class
48. and they are to copy them down five times, they are
49. all printed in the spelling books. Spelling words are

The following procedure provides a way to identify an instructional features framework from these data, both confirmatory and exploratory. The plan is an adaptation and extension of the ethnographic study conducted as part of the Beginning Teacher Evaluation Study (BTES) (Berliner and Tikunoff, 1976). It is designed to determine a features framework that adequately describes classroom phenomenology in a parsimonious manner, and to construct and validate scales for all features.

(1) Interviews will be conducted with teachers in all 1980-81 sample classrooms. The interview format will include items addressing class organization, staffing patterns, language use patterns, content areas addressed, and orientation towards maintenance/transition and cultural content. Classrooms might be classified by Fishman's scheme or some alternative. Data would be collected by a field staff of about 16 ethnographers (or fewer in a scaled down plan). Summary data will be stored in a master file of classroom characteristics. This data collection effort was already discussed briefly above.

(2) Descriptive statistics of classroom characteristics will be printed and examined to select a stratified sample of 64 (or fewer in a scaled down plan) classrooms each primary study language, and distinct approaches to bilingual education. The diversity should be as great as possible and should include monolingual classrooms with linguistic minority students.

(3) These classrooms would be divided into eight groups of eight each (or six groups of six each in a scaled down plan). Each group of eight would be selected to represent diverse characteristics within the group. Two of the 16 ethnographers would be assigned to each group of eight. Each of the two ethnographers must know the languages involved in each of the eight classrooms. Training sessions will be held to familiarize the 16 ethnographers with the present state of knowledge and tentative lists of features.

(4) Each group of eight classrooms and two ethnographers form a study unit. Observations will be held in one week units according to the following design or a modification of it.

Week	Observer 1 Classroom	Observer 2 Classroom
1	1	2
2	2	1
3	3	4
4	4	3
5	5	6
6	6	5
7	7	8
8	8	7

(5) Ethnographer pairs are then exchanged, associating each group of eight classrooms with two new ethnographers. They will then analyze the raw protocols (following Berliner and Tikunoff, 1976). Content analysis is the methodology used to determine the variables and dimensions that describe the differences between pairs of classrooms. Each classroom pair will be analyzed by each of the two ethnographers separately. Each content analysis will describe all of the ways in which the classrooms appear to differ and will take up to one day. Not all of the 56 possible pairs can be analyzed because of the time and resources this would absorb. About 20 days would be devoted to this task.

(6) Lists of variables describing variation would be drawn up. These will be inconsistent and overlapping. A more organized and succinct list of more or less independent variables will be constructed in a group working session of all ethnographers. The final list of features is to be the minimum dimensional structure under which the phenomenological differences among classrooms can be codified.

(7) The same ethnographers will then construct scales for the presence and extent or absence of all features. Although these scales will be developed from the original protocols the scales will be made to be useful for direct, in-class use. Following Berliner and Tikunoff, scales will be validated on the original protocols. Then they will be cast in the form of an in-class observation instrument.

(8) The instrument will then be field tested on a new sample of classrooms. The second, confirmatory sample, will be used to verify the generalizability of variables and scales developed from the exploratory sample. The objective of this approach is to obviate objections that are often levied against qualitative analyses--their particularity to the study sample. Scales with little discriminant validity would be discarded. Psychometric methods (item analyses, factor analyses, reliability analyses) would be used to revise the instrument, and the final version validated on yet another classroom sample.

(9) The features that emerge from this procedure will then be reconciled with lists from (1) the literature survey (Planning Paper 2), (2) the confirmatory data sources enumerated above. A comprehensive list of potentially significant features will emerge.

The emerging list of features will be comprehensive rather than exclusively significant. The significance of features can be judged only relative to their expected consequences for students, but there will be no quantitative data to measure these consequences in first wave analyses. Certain consequences will, however, be made evident in the ethnographic parts of the Classroom Study, and in the Student Case study. These potential consequences will be organized and associated with features that appear to be potential causes. From this, specific causal hypotheses will be formulated.

5.1.4 Classroom Ethnographic/Educational Dimensional Observation System

This data collection system is to provide information about the following domains of instructional features.

(1) Distribution of instructional time use by content area, language used, participant structure, grade, etc. The need for, and utility of, these data is discussed in Planning Paper 1, Section 4.1. The data will yield profiles that depict the empirical emphases of programs in a number of different ways: by language, by content area, by adult qualifications, by group size, or any combination of these. The complexity of profiles that can be constructed is limited only by the ability to break down time into smaller and smaller segments. This is a high pay-off approach from monolingual education research that is practically certain to yield a useful characterization of different program types. Moreover, it is known that there are direct statistical relations beween time use variables and academic achievement.

(2) Characterization of participation structures (Mehan, 1979) as significant features in bilingual education.

(3) Description of classroom level organization, numbers of teachers, teacher-aides, and students by language and culture; subgrouping and individualization practices; adult and student role definitions. Observational data on these will supplement and corroborate interview/questionnaire data on the same variables.

(4) Variables that characterize each classroom event or learning situation globally in these domains: macroethnographic, sociolinguistic, and educational. A list of linguistic variables discussed in the January 31-February 1, 1980 consultant conference is provided in Table 6.

(5) Descriptions of individual acts that occur in the content of learning situations in these domains: linguistic, educational.

The system will have three foci - student, adult, and classroom - discussed in the next three sections, respectively.

Table 6. A List of Linguistic Variables to be Considered in Implementing the Observation System

Language Proficiency of Teacher and Teacher-Aide.

Congruence of language between students, teachers, and teacher-aides.

Understanding of the student's language by the teacher. Does the teacher share the student's language variety.

Language preference by domain.

Code switching.

Characterization of the input stream of language to the student. Language mixing patterns - are languages selected by domain or time of day or are they mixed within domain and situation?

What codes are used for specific speech acts?

Styles of elicitation of language.

Communication competence rules - tolerance of interruptions, rules of address and respect, rules for turn-taking, etc.

Noise level of speech.

Student Focused Component

Child focused data can be collected either by "live-coding" or by videotape and delayed coding. The pros and cons of these two techniques are discussed in Planning Paper 3. In either case the observer focuses on a particular child selected by a sample plan to be determined. The child is followed all day or, alternatively, the observer may shift from one child to another at half-day intervals or other intervals. The objective, no matter what the specific sample design, is to construct pictures of a typical student's day (for each district student group).

The coded record of each student's experience includes the following data.

(1) "Learning Situation" at each time of day.

(2) Macroethnographic, linguistic, and social characterization of interactions within each learning situation.

(3) Significant linguistic and educational acts within each learning situation.

This plan is a generalization of Carrasco's design discussed in Planning Paper 3. It is designed to reconcile three approaches to classroom observations - time use by category of behavior, global (integrated) characterization of particular time segments, and event (act)-oriented interaction records. The key to the design is the concept of a "learning situation" which is an extension of the concept of a participation structure. To specify a learning situation, one needs the following data.

(1) Number of children in group with target child.

(2) Adults with child, by role of adult.

(3) Characterization of the basic interaction rules among adults and children.

(4) Language used for adult-adult, adult-child, child-adult, and child-child interactions.

(5) Language of curriculum materials.

(6) Content (e.g., math, culture, lunch, play, etc.).

Any time any of these variables changes, a new learning situation has occurred. One objective of the observation system is to characterize the duration and time of occurrence of each distinct learning situation through the day. This yields the type of record symbolized in Figure 3. This information can be captured either by time sampling at timed intervals, or by detection of boundaries between different learning situations. The resulting data provide three distinct resources for analyses:

(1) A detailed picture of the instructional resources delivered at the child level. This will provide a far better description of resource allocation than such undifferentiated measures as staff-child ratios, and would be extremely useful in analyzing the costs per child of different instructional models. The data would be an excellent base for econometric studies of bilingual education costs.

(2) By aggregating over students in different consumer groups the distribution of instructional time, differentiated by content area and language, can be obtained. The fundamental differences among different approaches to bilingual education can be made obvious by analyzing profiles of time devoted to different categories of instruction to different categories of students (see Planning Paper 1).

(3) Each learning situation is a context within which interactions can be analyzed. One can analyze interactions globally or within different contexts. The interaction analyses are thus embedded within a contextual framework of instructional time use.

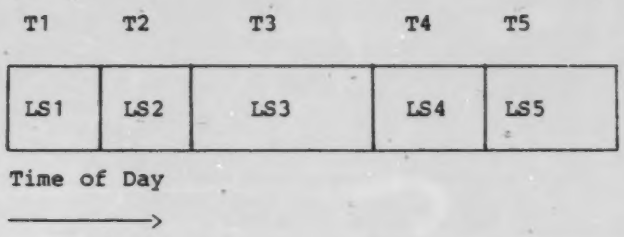

Figure 3. Pictorial Representation of One Student's Learning Situations, their Durations and Lengths.

There are two types of interaction data that can be collected within each learning situation segment. First, a group of ethnographically grounded qualitative scales based on previous exploratory analyses can be coded. Each scale would characterize interactions in a particular learning situation--i.e., the learning situation is the unit of analysis. Second, a group of discrete, significant events (acts) and event (act) sequences can be identified. The frequency of occurence of each event (act) would be recorded for each learning situation which is again the unit of analysis.

IDENTIFICATION CODES (Keyed to Videotape)
Description of Learning Situation
1. Duration of Learning Situation
2. Number of Students
3. Teacher
4. Teacher-aide
5. Language in use
6. Interaction Rule Code
7. Instructional Content
....
MACROVARIABLES (Global)
Sociolinguistic
1. Codeswitching
2. Interference
....
Educational
1. Educational Task Code
2. Degree of Involvement
....
EVENT RECORDS (Acts)
Linguistic Acts
1. Questions
2. Responses
....

Table 7. Structure of Record Describing One Learning Situation

Each learning situation can be represented by one logical record in a computerbased storage/retrieval system. An example of the variables that might be attached to each record is provided in Table 7. In order to store data in this easily retrievable manner, operational definitions for each variable must be constructed.

These definitions must extract generalizable parts of the process and discard the particularistic. This is an extension of the current state of the art in classroom ethnography, required by the large scale of the analysis and the need to summarize and integrate over many classrooms (see Planning Paper 3, Section 3.1). Customarily, variables have been implicitly defined on the basis of subjective understandings of particular classroom situations. While such exploratory work should be conducted in early phases of implementation, it must eventually yield to construction of operational, generalizable definitions of variables, capturing significant features of classroom phenomenology (see Planning paper 1, Section 4.2).

Adult Focused Component

The adult focused component of the observation system is designed (1) to identify, capture, and scale specific significant instructional features and (2) to determine instructional time use from the teacher's (or aides) perspective. Adult focused instructional features to be examined include teacher/aide background, proficiency in L1 and L2,* knowledge of content, use of materials, management skills, certification, teaching techniques, teaching styles, evaluation and remediatin practices, and use of language with students of different language dominances and proficiencies. The research will be open to any other features that appear to distinguish teacher/aide related phenomena.

*AAI consultanta agree that these data are essential, but testing per se is not feasible. A reasonable plan is to use the Foreign Service Institute (FSI) scales.

The adult time use metric emphasizes the total supply of resources in the classroom. The framework of the adult observation system should be similar to that of the student observation system. Variables to be captured in different contexts include teaching methodology, language use, differential behaviors to different groups of students, and teaching styles. Observation data will be integrated with interview/questionnaire data on teaching credentials, knowledge of instructional methods, background, management skills, etc. Interviews will be guided by formal protocols if these can be cleared in time for use in the 1980-81 school year, but otherwise will be unstructured.

Classroom Focused Component

The classroom focused component consists of three parts:

(1) A checklist inventory of classroom physical features,

(2) Global assessments of classroom climate and other subjective global variables,

(3) All-day observations of classroom process, focusing on adults present, number of students present from different consumer groups, subgrouping and pullout practices by consumer group of students.

Together, the three components enable identification and measurement of classroom features for use in both descriptive and process-product analyses.

5.2 First Wave Student Case Studies

The object of this study is to produce case studies of a sample of children and thereby attempt to document some of the non-quantitative and subtler effects of bilingual education. This non-quantitative approach is suitable for study of language and cultural groups for which adequate assessment instruments are unavailable in the study. This study will partly compensate for the lack of quantitative measures of consequences in

the 1980-81 academic year by obtaining qualitative measures of consequences that appear to be significant in a large number of case histories. A list of these significant consequences will be constructed.

The sample will conform to the criteria cited by Kennedy (1979) for generalizability from case studies, i.e. they will be stratified to include nearly all student and project attributes in the overall sample and will exclude obviously unique cases. They will represent all eight primary language strata. The sample will also be used in the second wave, and is the basis for a proposed longitudinal case study sample.

The initial data will consist of purely descriptive, noninterpretive accounts of individual bilingual students. Accounts would include data about how students reveal themselves to an interviewer through speech and other communicative behavior, and how they appear to an observer inside and outside the classroom. The following areas would be specifically included:

1. Speech in both languages (including history of psycholinguistic development)
2. Social interaction and other communicative behaviors
3. Bicultural socialization
4. Attitudes
5. Value orientation
6. Self-perception
7. Personality characteristics (to the extent possible, atheoretically or phenomenologically)

The specific content of interview instruments for this study can be adapted from the Inventory of Socialization for Bilingual Children (Cervenka, 1968). To these data would be appended information on grades, grade retention, absences, drop-out, etc., as measures of "life chances" from school records. Individual psychoeducational and affective measurements may also be useful in describing these students. Though the primary focus of these case studies is individuals, significant secondary foci on teachers and parents, and on their interrelationships should be included. The data will also incorporate information on how students spend their time outside

school, and the specific contextual features that appear to be significant. This part of the data will be used as a foundation for the contextual features study.

Another component of the case study focuses on equity issues for students. The question of whether or not bilingual education represents an "equal educational opportunity" for minority-language children is hypothesized to be mediated by characteristics of both—bilingual education and the specific minority language group. This study would focus on the hypothetical options available to the case study sample from the public school system and how these options can be seen to provide equal educational opportunity. The focus of the study will be the parent and the attitudes and values which the parent holds on the education of the case study student.

Once descriptive case studies have been completed and written, additional procedures would be applied to the case study documents. These would include procedures for debiasing reporting, analyses of the content of the case studies along preselected and exploratory dimensions, and searches for frequently occurring patterns of descriptive data.

From these analyses, it will be possible to make interpretations of the case study data and derive generalizations. Cervenka has conducted a number of such student studies and found them to be useful in broadening and supplementing understanding of educational program impacts, e.g., North, Cervenka (1971) and North (1972). The data will be analyzed to identify specific instructional features that conform to those from other first wave studies. The sample will also be used to organize and codify a framework of consequences for students. These two frameworks will be used to reduce the data in a way that makes possible integration of data from many cases in a consistent, generalizable manner. The data, so reduced, will be used to generate causal hypotheses about the consequences of features for students. The consistency of these grounded hypotheses across

distinct subset of the data will be examined in order to reduce particularity of conclusions. The heterogeneity of the sample makes this a meaningful assurance of some generality in the hypotheses to be formulated.

5.3 Contextual Features Study

The Classroom Study concentrates on the phenomenology of the classroom. Its main objective is to identify significant features, and quantitative/qualitative scales for features, within the classroom domain. The purpose of the contextual features study is to extend this analysis beyond the classroom. This requires different analytic methods, since systematic observation is difficult to implement outside the classroom.

The need for such a study is discussed in Planning Paper 3 (Section 3.6). Some of the arguments are that (1) much language learning takes place outside the classroom, especially in contrast with such subjects as math, (2) the most interesting domain of the language use, and especially communicative competence, lies outside the classroom, (3) there is an enormous resource of community institutions that utilize and foster non-English languages (Fishman, 1979).

The approach of the contextual features study is anthropological and sociolinguistic. One begins with the linguistic minority student and moves outward to school, neighborhood, and community domains. Note that the features of the school domain that the child actually encounters (playground, gym, lunch room, etc.) are also part of the child-focus classroom study proposed for Stage 2 (see below), and that the language use focused substudy involves the school context.

This study requires the inclusion of local participant researchers if it is to succeed in a relatively short period of time. These reserachers would work with staff of the contractor conducting the study, perhaps at a local site office. The approach to the conceptual features study will be facilitated if the primary sampling unit is chosen to be the LEA, as discussed in Section 4 above. There are several components of the contextual features study discussed below.

Community Non-English Language Resources

In each site, formal and informal institutions that might be considered non-English language resources are encountered by students in the student case study will be inventoried. These resources include the non-English press, radio and TV, ethnic-community schools, and ethniccommunity churches. Fishman's list of such resources pertinent to the specific site will provide a useful starting point, but his list cannot possibly be as complete as one obtained on-site from inquiries of the students themselves. The list of resources generated in this way should be compared with Fishman's list, and this study coordinated with his.

The next step is to determine which groups of students are involved and the meaningfulness of the institutions as part of these students' lives. The object is to understand the relation of community institutions and schools as different parts of the overall linguistic instructional environment. These community institutions are an important part of the bilingual instructional universe.* Through case study and other qualitative methods, the significant features of these institutions will be determined, and hypotheses about their consequences for students will be formulated.

Community/School Involvement

In a second component of the contextual features study, the channels of involvement among the conventional school, community leaders, and parents will be investigated. The role of organizations like PAC groups or other formalized school/parent involvement groups, and the degree of actual community power over schools will also be examined. The primary objective is to identify the features with tangible consequences for students.

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*See Planning Paper 1.

Family/Parent Studies

The support of the family is known to be the primary external influence on performance of students in school. In the family/parent study, an attempt will be made to identify which features of the home life of the student contribute most substantially to consequences for language minority students. Many studies of the role of the home in monolingual education have been conducted, and the study should build on them, but findings have been mostly either indefinite or too obvious to be of much value. The most important consistent finding is dependence of academic performance on generalized SES of the family, but this rather obvious finding should not discourage the presently proposed study. The predominant features of the family for language minority students are likely to lie, instead, in linguistic domains. Studies should include consideration of socioeconomic status, but the main concentration should be on language use.

This study will be limited by the ability to assess the phenomenological features of the home. Every home study that AAI has conducted, or is aware of, has been so limited. The best method appears to be the interview administered questionnaire, either in the home or at a community center such as the school. If structured interviews cannot be implemented, AAI suggests the use of trained anthropologists and participant researchers is open, unstructured interviews and observations. These must be content analyzed and reduced for analysis in order to identify significant features.

The feasibility of conducting contextual features studies of the type recommended will be investigated in Feburary 1980 in the Field Verification Effort (Task 5). In this effort, participant research teams will be identified in Miami, New York City, Oakland, Los Angeles, and Rough Rock, AZ. These participants will be briefed on the objective of the investigation by AAI staff. They will conduct interviews with 20-30 respondents from all parts of the school/community system, in order to determine

availability of data, credibility of measures and of the study in general, and general accessibility for research. This approach will test the participant researcher approach itself, and will provide early indication of considering the city, SMSA, county, or other large political subdivision as the primary sampling unit.

5.4 Management, Implementation and Costs Study

The objective of this study is to prepare a description of program administration and control, and of money flow through the system. The description of control would include both formal and informal controls. The nature of control devices and systems will be examined, including the use of program models. The study will investigate the degree to which the implemented classroom program is controlled by the teacher, how much by externally defined teaching models, and how much by the community and students' parents. The implementation process will be investigated, but not in the detailed way planned for the Title VII Instructional Component study being conducted by Development Associates for USOE.

The importance of understanding the role of "adminstrative" models in bilingual instruction was cited in Working Paper 1, where it was recommended that a "model" be considered as a more or less distinct, empirically based pattern of classroom phenomena. An "administrative model" was defined as a device specifically designed for control of classroom process. In order to apply knowledge from the instructional features study to the improvement of instruction, one needs to understand the relation of empirical classroom models to administrative models. This is one of the objectives of the Management/Implementation/Costs Study.

Study products will include flow charts depicting control and money flow systems, with accompanying description of these processes. Significant features of these systems will be identified and their potential consequences described. An attempt will be made to prepare check lists and scales that could be applied in quantitative/qualitative assessments of these features.

Data will be obtained via (1) examination of relevant paper materials used in the management/costs process for information and program control, (2) interviews and self-report questionnaires from actors in the system at all levels of the hierarchy, and (3) open anthropological/ethnographic investigation. Emphasis will be placed on broader, more powerful forces and relations rather than on microprocess. The investigation will center on the relations that exist between bilingual instructional faculty, other teachers, and administrators at all levels. The investigation should identify specific barriers, feelings of isolation or inclusion, forces perceived, and other major features of the organization. The study will be conducted in a subset of schools considered to offer a variety of different organizational structures. Results will be synthesized to form general conclusions about management/implementation/costs patterns in bilingual education programs.

5.5 Language Use Focused Substudy

Research has shown that standardized tests do not always capture the language use of language minority students who may appear weak in English and/or their native language. When these students are interviewed or observed outside the classroom context, an abundance of language use is frequently observed. This substudy would focus on language as used for communication, focusing on sociolinguistic competency.

The data would be collected from a sample of students from each first wave study classroom. Language samples, obtained via wireless transmitters attached to the children, will be analyzed to determine linguistic content and the triggers for various uses (choice of languages, code switching, interference, etc.). Language samples would be linked to simultaneous observational records to establish context. Situations would be selected to concentrate on children's interactions with their peers in both the classroom and the playground.

These data provide measures of some of the most important consequences for children. This substudy would extend the measures of linguistic proficiency and competency available to help formulate hypotheses about consequences for students. All language groups, including those outside the eight primary study groups can be included. The measures made available will extend the linguistic domain to the area of linguistic competence and thus compensate for the narrowness unavoidable in standardized tests. Language use data can be compared with other data and perhaps used for cross validation. Congruence of language use inside and outside the classroom would be examined.

There are two methodological problems with this proposed study. The process of coding language samples for linguistic elements is long and expensive, and needs further development. The process of making inferences from this study will not be entirely straightforward, and will require expert inputs from linguists.

6. Second Wave Design

The four main activity areas of the second wave are as follows.

(1) (Fall 1981 - Spring 1982) Analyze first wave data and prepare a report for the 1982 ESEA reappropriation hearings. The report focuses on identification of bilingual education instructional features, and grounded hypotheses about their consequences for students.

(2) (Fall 1981 - Spring 1982) Collect second wave data for the following studies:

Wave 2 Classroom Study

Wave 2 Student Case Study

Consumer Attitude Study

Language Acquisition Focused Substudy

This should be completed in the first six months of the 1981-82 study year.

(3) (Fall 1981 - Summer 1982) Perform focused ethnographic studies to test specific hypotheses growing from analyses of Phase 1 data.

(4) (Spring 1982 - Summer 1982) Begin analyses of Stage 2 data. These analyses are aimed at building the base for final reports and for production of materials for improvement of bilingual education instructional practices.

6.1 Second Wave Classroom Study

The purposes of the Classroom Study are (1) to verify the identification of classroom instructional features and corresponding scales, (2) to examine qualitative and quantitative consequences for children, and (3) to determine relations between instructional features and consequences for students, and specifically to test hypotheses generated from first wave data. The results of these analyses will be used in research reports, and in materials designed to assist in improving bilingual education instructional practices.

This study builds on knowledge produced in Wave 1, including:

(1) a framework of identified instructional features,

(2) scales for these features,

(3) a framework of identified consequences for students, and

(4) grounded hypotheses about the consequences of these features for students.

(5) an operational data collection system implementing that outlined in the discussion of the first wave of the study.

Second wave analyses make use of much more rigorous measurement instruments prescribed or developed in first wave analyses. The measurement battery includes test instruments to assess consequences for students; revised and validated questionnaire and interview protocols; a comprehensive observation system with student, adult, and classroom foci; and a computer based storage/retrieval system. Macroethnographic, sociolinguistic, and other qualitative data will be converted to quantitative scales. All measures will be examined in assessments of reliability via classical test theory or Cronbach's (1972) generalizability theory.

The study will follow a detailed design grounded on the knowledge produced in the first studuantitative scales. All measures will be examined in assessments of reliability via classical test theory or Cronbach's (1972) generalizability theory.

The study will follow a detailed design grounded on the knowledge produced in the first study year. The framework of consequences that can be quantitatively measured is limited by the availability of valid and reliable instruments. Therefore, it is anticipated that the student test battery will be narrower in scope than is desireable. For instance, longer term variables relative to life chances cannot be measured directly. Certain affective variables have never been validly or reliably measured. The companion Student Case Study and Language Acquisition Focused substudy and suggested longitudinal study help to compensate for this narrowness, and should be considered vital parts of the overall design.

Analyses will use variants of process/product methodology to verify or invalidate grounded hypotheses, and thus to avoid some of the causal dilemmas that usually occur in correlational analyses. There are two main thrusts to the analyses.

In the first thrust, a classification of instructional environments will be made by using such standard statistical tools as cluster analysis and factor analysis, along with substantive knowledge. The object is to find sets of instructional environments that represent distinct approaches to bilingual education. Individual features may be thought to emanate from some deeper organizing principle, perhaps one of basic educational philosophy. The distinct approaches identified represent ecpirical models of bilingual instruction, that will serve as a basis of comparison of the consequences of bilingual education for students.

In the second thrust, instructional features are considered directly as independent variables in analyses. This approach is conventionally referred to as product-process analysis. A potential problem with such analyses is that there are often so many related independent variables that causal conclusions are clouded. This problem may be avoided by classifying features into closely related clusters. Then only from a given cluster would be used in any given analysis. The results may be difficult to interpret causally. Interpretation is made easier by basing it on the framework of grounded hypotheses from first wave analyses.

6.2 Second Wave Student Case Study

This study follows directly from the case studies that were used (in part) to generate grounded hypotheses in the first wave. A new sample of students, mostly in new classrooms, will be selected and used to extend the sample so that external validity can be tested. Case histories of these students will be taken just as in the first wave. These case histories

will be content analyzed to determine the presence or absence of features and consequences that were identified earlier, and the relation between features and consequences reexamined. Each hypothesis will be tested qualitatively by checking the apparent relation of feature and consequences in the new data. Analyses will be conducted for the most part by different researchers than those used in the first wave, so that new perspectives can enter and subjectivity reduced. Each hypothesis will be judged validated or invalidated on the basis of these analyses. This technique, which will be developed further, is an attempt to obtain nonparticular, generalizable results from case study data. The apparent validity of conclusions across different parts of the data set (e.g. different sites) will be examined, just as it would be in the case of quantitative analyses. The results of this study may therefore be regarded as verified knowledge.

6.3 Consumer Attitude Study

The objective of this study is to determine the network of attitudes of the many interested "consumers" of bilingual education towards each other, and towards the institutions, and cultures, and languages involved. Data will be collected via self-response questionnaires, interviews, investigation of participant observers, and by qualitative core study researchers. Respondents will be selected from the following groups.

Societal

The L1 Community
The L2 Community
The Public-at Large
The Media

Institutional

The Federal government
The State government
The LEA
The School
Community Institutions

Individual

LEA administrators
Principals
Students
Parents
Teachers and Aides
Community Leaders

Attitudes of each of these groups towards the others will be assessed. In addition, attitudes towards the following will be assessed for each group above.

The Native Language Culture
Non Standard forms of language
Cultural Maintenance
Cultural Diversity/Pluralism
Minority Assertiveness/Identity

Attitudes of the students themselves will be surveyed in detail. Students sill be selected from all major consumer groups. Attitudes towards the following will be investigated.

Self
Peers (L1, L2)
Teacher (L1, L2)
Aide (L1, L2)
Other minority cultures and languages.

6.4 Language Acquisition Focused Substudy

Description of Approach

This study will be conducted on the special language sample also used for the Language Use Study. It focuses on those students in the eight primary study language/geographical groups in order to minimize measurement problems and concentrate on substantive issues.

The objective of the study is to produce information about language development, the interrelation of L1 and L2 development, and the relation of these with project characteristics, particularly different empirical models.

The language measures (L1, L2) to be used will consist of the number of words the student knows from specified vocabulary lists. For English, the S.W.R.L. Language Skills Framework provides a useful list. AAI is aware that this simple measure cannot capture the complexities of language development, but the vocabulary score has the two properties required for the analyses to be performed. (1) It is an absolute criteria measure that is readily interpretable as a scale of real growth. It does not require complex scaling to adjust measures between different ages (unlike IQ score, for example.) Rather it has the simplicity of, say, measurement of height in inches. (2) The vocabulary measurement can be taken very quickly so that student burden at any one testing is minimal. This is important because the design calls for testing at one month intervals, and overall burden must be acceptable.

Three to seven coherts (either grades K-2 or K-6) will be selected for the overall sample. Each student will receive nine vocabulary tests in L1 and L2 at one month intervals over the 1981-82 academic year. From these data, two overall (4 to 7 year) longitudinal growth curves (L1, L2) can be constructed, with one month data intervals. Analyses based on such data

are often called "cross-longitudinal". These assembled growth curves will be used to examine differences in language growth that may exist between different approaches (or empirical models) in bilingual education. There ought to be distinct differences between, for instance, maintenance and transitional programs.

The more interesting analyses, however, will be truly longitudinal, concentrating on individual growth curves. First, the years in which the greatest growth occurs will be identified. Then short time series analyses about the individual relations between L1 and L2 growth will be performed. A methodology for such time series of analyses of short sequences of growth measurements was developed by R.L. Goodrich (1978-79) and P.E. Caines.

The most important knowledge that will be produced is the dependence of the rate of L2 language acquisition on L1 proficiency. If strong relations are found, there are profound implications for the educational productivity of different bilingual education approaches. Currently, interest in these relations has been heightened by the studies of Finnish children in Sweden (1977), by Shutnabb-Kangas (1976) and Toukomaa (1977) and by Cummin's review of cognitive research on bilinguals. The most important single question to be resolved is whether there is a minimum level of L1 proficiency that should be achieved before L2 is taught, i.e. is there a threshold effect for L2 Language learning? The answer to this question would be immediately useful in design of bilingual instructional curriculum

7. Report Writing

No new research activities will be conducted in the final six months of the study. The purpose of this period is to (1) integrate knowledge produced in the two waves of the study, (2) to prepare final reports presenting this knowledge in forms useful to Congress, researchers, the bilingual education community, and the general public and (3) to translate these research results into "detailed, practical materials or guides for instructional improvement."

The final products of the study will include separate reports keyed to different audiences. These would include:

(1) A report to Congress stressing implications for public policy,

(2) A technical report for researchers and others who wish to involve themselves in all details of the study,

(3) A non-technical report for the general public and many practitioners, and

(4) Guides for Instructional Improvement.

The magnitude of the report writing task should not be underestimated. To ensure success, these reports would have to be produced simultaneously by different (but coordinating) writing teams.

8. Follow-up Design

The importance of longitudinal follow up studies in bilingual education was discussed in Planning Paper 3, Section 3.11, where Tucker (1979) was quoted.

> Critical, empirical, and longitudinal assessments have been particularly lacking. The paucity of such studies can be attributed to a variety of sources such as the transience of potential researchers, the unwillingness or inability of funding agencies to commit funds for a multiyear or even decade long project,...and the unfortunate tendency for administrators to regard initial results as the major criterion for continuing or terminating as proposed lengthy project.

AAI is aware that funds may not be available for longitudinal studies, even though they appear essential to many researchers. However, a demand often arises for longitudinal studies not planned for in the original design. The opportunity to conduct such studies has sometimes been lost by the time the demand arises. Therefore we suggest that,even if funding seems unlikely, provision be made for longitudinal studies. Practically speaking, this means that (1) follow-on samples should be identified, (2) baseline measures should be obtained for students in this sample, and (3) provision should be made to track students through the school system.

Two useful longitudinal studies have been identified so far — a cognitive development study and a set o child case studies. These are briefly discussed in Section 3. Plans will be made more detailed for the Final Report of this planning study when Task 7 ("indicate options for periodic follow-up") results are submitted to NIE.

Consultant Conference Attendees

Jan 31 - Feb 1, 1980

George Blanco, University of Texas at Austin
Robert Carrasco, Harvard University
Edward Cervenka, Development Associates Inc.
Mae Chu-Chang, NIE
Milton Goldsamt, Development Associates Inc.
Andrew Lawson, University of Minnesota at St. Cloud
Gaea Leinhardt, University of Pittsburgh
Jose Llanes, Eastern Michigan University
Rodger Lum, Asian Community Mental Health Center, Oakland, CA
Abdil Abel Maldonado-Guzman, Harvard University
Christina Bratt Paulston, University of Pittsburgh
Iris Santos Rivera, Indian Coalition of Schools, Denver, CO

Other Persons Contacted in Preparing this Report

Tomas Arcieniega, School of Education, San Diego State University

Ray Chesterfield, Juarez and Associates, Los Angeles, CA

Sam Cohen, Babel Inc., Berkeley, CA

B. Roberto Cruz, Babel, Inc. Berkeley, CA

Malcolm Danoff, American Institutes for Research, Palo Alto, CA

Domingo Dominguez, SEDL, Austin, TX

Heidi Dulay, Bloomsbury West, San Francisco, CA

Ruben Espinosa, Institute for Cultural Pluralism, San Diego State University

Tracy Gray, Center for Linguistic Analyses, Arlington, VA

Carlos M. Haro, Chicano Studies Center, UCLA

Neal Killalea, Killalea Associates, Alexandria, VA

Jose Llanes, University of Eastern Michigan, Ypsilanti, MI

Hugh Mehan, Laboratory for Comparative Human cognition, UCSD

Xenis Melendez, New York Board of Education

Carmen Mercado, Hunter College, New York

William Milan, Yeshiva University, New York

Luis Moll, Juarez and Associates, Los Angeles, Laboratory for Comparative Human Cognition, UCSD

Alberto Ochoa, Institute for Cultural Pluralism, San Diego State University

Masahito Okada, SWRL, Los Alamitos, CA

Raymond Padilla, Eastern Michigan University

Pedro Pedraza, Center for Puerto Rican Studies, New York

Ray Perez, Juarez and Associates, San Diego, CA

Donald Reisler, DBS Corporation, Arlington, VA

Flora V. Rodriguez-Brown, University of Illinois at Chicago

Marietta Saravia Shore, Columbia University

Rudolph Troike, National Clearinghouse for Bilingual Education, Arlington, VA

Jose Vasquez, Hunter College, New York

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